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EXAMINER	
ARCHIE, NINA	

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1645	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/500,167	LEE ET AL.	
	Examiner	Art Unit	
	Nina A. Archie	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *1/9/2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 14-17* is/are pending in the application.

4a) Of the above claim(s) *7-9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6, 10-12, 14-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 9, 2009 has been entered.

Amendment Entry

2. The amendment filed January 9, 2009 has been entered. Claims 1 and 10-11 have been amended. Claim 13 has been cancelled. Claims 1-12 and 14-22 are pending. Claims 7-9 and 18-22 are withdrawn from consideration as being drawn to non-elected inventions. Claims 1-6, 10-12, 14-17 are currently under examination.

Rejections Withdrawn

3. In view of the Applicant's amendment and remark following objections are withdrawn.

a) The rejection of claims 1 and 3 under 35 U.S.C. 102(b) as being anticipated by Biswas et al. (Journal of Clinical Microbiology, 1997 Vol. 35, pages 1560-1564) is withdrawn in light of applicant's amendment.

b) The rejection of claims 1 and 2 under 35 U.S.C. 103(a) as being unpatentable over Biswas et al (Journal of Clinical Microbiology, 1997 Vol. 35, pages 1560-1564) in view of Holt et al (TWGDAM Validation May 2001 pages. 66-67) is withdrawn in light of applicant's amendment.

c) The rejection of claims 1, 4-6, 10-12 and 14-17 under 35 U.S.C. 103(a) as being unpatentable over Sheiness et al. (US Patent No. 5,776,694) in view of Holt et al. (TWGDAM Validation May 2001 pages. 66-67) is withdrawn in light of applicant's amendment..

d) The objection to claim 10 for containing the acronyms PVA and PVP without defining them is withdrawn in light of applicant's amendment.

New Grounds of Rejections

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 1-6, 10-12, 14-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to a method for preparing a sample obtained from a human patient for performing a diagnostic method to detect whether the patient has been infected with an infectious agent, wherein the sample is an endocervical fluid sample or a vaginal fluid sample, wherein the method comprises the steps of: a) treating sample to reduce an inhibitory effect of the sample on the diagnostic method; and b) performing the diagnostic method in the presence of DNase.

The scope of the claims as set forth above is drawn to a vast genus of inhibitory effects associated with a given diagnostic method (unnamed).

The specification states discloses an inhibitory effect of vaginal fluid on the assay sensitivity was observed when known amounts of elementary bodies's (EB) were spiked into vaginal swabs (Figure 1). Furthermore, the signals generated in the present of vaginal fluid showed a reduction of approximately 100 fold compared to buffer. The specification states there are at least two aspects to the inhibitory phenomenon observed with vaginal swab specimens: direct inhibition of antibody-antigen interaction and indirect inhibition of the test by preventing proper mixing of reagents and the reduction or inhibition of liquid flow and that the inhibitory effect varies widely between

individuals and within the same individual during different periods of the menstrual cycle.

However, the instant claims encompass all diagnostic methods that can be used to detect any and all infectious agents. Not only is the specification silent with regard to what diagnostic methods can be used to detect a given infectious agent, it is remiss in disclosing what inhibitory effects are possible within a given test system and equally remiss in disclosing what steps must be performed to reduce a given inhibitory effect. Since the disclosure fails to describe the reduction of the inhibitory effect demonstrated to detect whether the patient has been infected with an infectious agent as claimed, one of skill in the art would reasonably conclude that the disclosure fails to provide a representative number of species to describe the genus of inhibitory effects as claimed. Thus, applicant was not in possession of the claimed genus.

The courts have held that possession of a genus may not be shown by merely describing how to obtain members of the claimed genus or how to identify their common structural features. The written description requirement is separate and distinct from the enablement requirement (See also *Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 920-23, 69 USPQ2d 1886, 1890-93 (Fed. Cir. 2004) and adequate written description requires more than a mere reference to a potential method for identifying the candidate polypeptides. The purpose of the written description requirement is broader than to merely explain how to 'make and use' [the invention] *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1560, 19 USPQ2d 1111, 1114 (Fed. Cir. 1991).

The written description is not deemed to be fulfilled and the specification lacks proper written description of the claimed method as set forth *supra*. This issue is best resolved by Applicants pointing to the specification by page and line number where description of the claimed invention is set forth. Therefore, absent a detailed and particular description of a representative number, or at least a substantial number of the members of the genus inhibitory effects and the reduction of inhibitory effects, the skilled artisan could not immediately recognize or distinguish members of the claimed genus as set forth supra. Therefore, in accordance with the Guidelines, the description is not deemed representative and thus does not meet the written description requirement.

Applicants are directed to the Revised Interim Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, 1 "Written Description" Requirement, Federal Register, Vol. 64, No. 244, pages 71427-71440, Tuesday December 21, 1999.

5. Claims 1-6, 10-12 and 14-17 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method for preparing a endocervical or vaginal fluid sample obtained from a human patient for performing a dipstick based diagnostic method to detect whether the patient has been infected with *Chlamydia trachomatis* utilizing DNAase and an oxidizing agent does not provide enablement for method for preparing a endocervical or vaginal fluid sample obtained from a human patient for performing a diagnostic method to detect whether the patient has been infected with any infectious agent and the inhibitory effects on the sample and the reduction of an inhibitory effect on a sample. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with the claimed invention.
Enablement is considered in view of the Wands factors (MPEP 2164.01(a)).

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to:

(A) The breadth of the claims;
(B)The nature of the invention;
(C)The state of the prior art;
(D)The level of one of ordinary skill;
(E)The level of predictability in the art;
(F)The amount of direction provided by the inventor;

(G)The existence of working examples; and
(H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

Nature of the invention

The claims are drawn to a method for preparing a sample obtained from a human patient for performing a diagnostic method to detect whether the patient has been infected with an infectious agent, wherein the sample is an endocervical fluid sample or a vaginal fluid sample, wherein the method comprises the steps of:

a) treating sample to reduce an inhibitory effect of the sample on the diagnostic method; and b) performing the diagnostic method in the presence of DNase.

The breadth of the claims

The claims encompass methods of preparing a vaginal or endocervical sample for use in any method to determine whether a human patient is infected with an infectious agent wherein said preparation reduces the inhibitory effect(s) associated with a given diagnostic method. The instant claims encompass all inhibitory effects affecting any diagnostic method for any pathogen with the proviso that said method is performed in the presence of DNase.

Guidance in the specification

The specification states discloses an inhibitory effect of vaginal fluid on the assay sensitivity was observed when known amounts of EB's were spiked into vaginal swabs (Figure 1). Furthermore, the signals generated in the present of vaginal fluid showed a reduction of approximately 100 fold compared to buffer. The specification states there are at least two aspects to the inhibitory phenomenon observed with vaginal swab specimens: direct inhibition of antibody-antigen interaction and indirect inhibition of the test by preventing proper mixing of reagents and the reduction or inhibition of liquid flow and that the inhibitory effect varies widely between individuals and within the same individual during different periods of the menstrual cycle.

The specification does not specifically state the assay utilized in the claimed method comprising an oxidizing agent nor discloses any inhibitory activity of a given sample and its effect on a given method to detect an infectious agent. The specification does not specifically describe any type of inhibitory effects affecting non-dipstick based assays. Although the specification specifically discloses blocking agents and inhibitory substances, the disclosure does not state the effects of any inhibitory substance or blocking agent on the sample to detect whether the patient has been infected with an infectious agent as claimed.

The specification only discloses the efficacy of using DNase and hydrogen peroxide etc in optimizing samples for use in a dipstick based test. The specification discloses the specific effects caused by DNA, viscosity etc on dipstick based assays. Howevver, these effects do not correlate to other types of assays Moreover, the specification does not disclose what effects is are eliminated due to the DNase activity. Furthermore, the specification is not only silent to the inhibitory effects inherent in each assay but also to any method for preparing a sample to detect any infectious agent. Therefore the skilled artisan would clearly realize the critical deficiency of this specification with regard to a diagnostic method to detect whether the patient has been infected with an infectious agent.

Working examples

The specification discloses working examples of a method for preparing a sample obtained from a human patient for performing a diagnostic method to detect whether the patient has been infected with Chlamydia (see Figures and tables 1-2).

The Quantity of Experimentation Required

The quantity of experimentation required to practice the invention as claimed would be undue as the instant claims encompass any and all inhibitory effects associated with any and all diagnostic methods for any and all infectious agents. Given the lack of guidance set forth in the specification it would require undue experimentation to practice the full breadth of the claimed invention.

In conclusion, the instant claims are only enabled for the use of Dnase and oxidizing agents in dipstick based diagnostic assays but not the full breadth of the instant claims. The instant claims encompass any and all inhibitory effects associated with any and all diagnostic methods for any and all infectious agents. The specification only discloses the efficacy of using DNase and hydrogen peroxide etc in optimizing samples for use in a dipstick based test. Furthermore, the specification is not only silent to the inhibitory effects inherent in each assay but also to any method for preparing a sample to detect any infectious agent. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with the claimed invention. As a result, for the reasons discussed above, it would require undue experimentation for one skilled in the art to use the claimed methods.

35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Bhattacharjee et al US Patent No. 5,919,617 Date July 16, 1999.

Claims 1 and 14 are drawn to a drawn to a method for preparing a sample obtained from a human patient for performing a diagnostic method to detect whether the patient has been infected with an infectious agent, wherein the sample is an endocervical fluid sample or a vaginal fluid sample, wherein the method comprises the steps of:

a) treating sample to reduce an inhibitory effect of the sample on the diagnostic method; and b) performing the diagnostic method in the presence of DNase.

Bhattacharjee et al teach methods and materials for detecting the presence of a fungus in a biological sample (see abstract) obtained from healthy mammals subjects or those with frank or occult disease such at-risk patients from a site on or in the body (see column 7 lines 60-67) which correlate to a method for preparing a sample method for

preparing a sample obtained from a human patient for performing a diagnostic method to detect whether the patient has been infected with an infectious agent.

Bhattacharjee et al teach samples comprising tissues, including but not limited to swabbing from mucocutaneous membranes such as swabs from the vagina which correlate to a method, wherein the sample is an endocervical fluid sample or a vaginal fluid sample, wherein the human patient sample is obtained as a self-collected vaginal swab sample (see column 8 lines 1-7).

Bhattacharjee et al teach nucleic acids derived from the biological samples of the present invention may be DNA, including but not limited to cDNA, and RNA, including but not limited to mRNA. Bhattacharjee et al teach RNA isolated from mixtures of DNA and RNA by using selective exonucleases, such as DNase and RNA obtained from the sample can be converted to cDNA (see column lines 1-19) which necessarily teach the presence of DNase in a diagnostic method.

Bhattacharjee et al teach nucleic acids isolated from the biological samples or may remain embedded in such samples and that as used herein, "nucleic acids derived from a biological sample" encompasses DNAs and RNAs contained in a biological sample and specifically nucleic acids not isolated from the biological sample (see column 8 lines 1-23). Bhattacharjee et al teach methods, hybridization probes are applied directly to a biological sample in a manner known as in situ hybridization (see column 8 lines 50-59) which correlates a method, comprising the steps of: a) treating sample to reduce an inhibitory effect of the sample on the diagnostic method; and b) performing the diagnostic method in the presence of DNase.

35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhattacharjee et al US Patent No. 5,919,617 Date July 16, 1999 in view of Bhattacharjee et al US Application No. 20030039981 Date February 27, 2003 Filing Date November 27, 2001 and Switchenko et al US Patent No. 5,563,038 Date October 8, 1996.

Claims 1-6 and 14 are drawn to a method for preparing a sample obtained from a human patient for performing a diagnostic method to detect whether the patient has been infected with an infectious agent, wherein the sample is an endocervical fluid sample or a vaginal fluid sample, wherein the method comprises the steps of:

a) treating sample to reduce an inhibitory effect of the sample on the diagnostic method; and b) performing the diagnostic method in the presence of DNase (claim 1); wherein the DNase is present in an amount selected from the group of consisting of: (i) more than 0.5 μg/ml and (ii) 0.5 to 100 μg/ml (claim 2); wherein the DNase is present in an amount selected from the group consisting of: (i) more than 1.5 units of activity per ml and (ii) 1.5 to 300 units activity per ml (claim 3); wherein the sample is treated with an oxidizing agent (claim 4); wherein the oxidizing agent is hydrogen peroxide (claim 5); using a working concentration of hydrogen peroxide of 0.5% to 3% w/v (claim 6).

Bhattacharjee et al US Patent No. 5,919,617 teach methods and materials for detecting the presence of a fungus in a biological sample (see abstract) obtained from

healthy mammals subjects or those with frank or occult disease such at-risk patients from a site on or in the body (see column 7 lines 60-67) which correlate to a method for preparing a sample method for preparing a sample obtained from a human patient for performing a diagnostic method to detect whether the patient has been infected with an infectious agent (claim 1).

Bhattacharjee et al US Patent No. 5,919,617 teach samples comprising tissues, including but not limited to swabbing from mucocutaneous membranes such as swabs from the vagina which correlate to a method, wherein the sample is an endocervical fluid sample or a vaginal fluid sample, wherein the human patient sample is obtained as a self-collected vaginal swab sample (see column 8 lines 1-7) (claim 14).

Bhattacharjee et al US Patent No. 5,919,617 teaches nucleic acids derived from the biological samples of the present invention may be DNA, including but not limited to cDNA, and RNA, including but not limited to mRNA. Bhattacharjee et al US Patent No. 5,919,617 teach RNA isolated from mixtures of DNA and RNA by using selective exonucleases, such as DNase and RNA obtained from the sample can be converted to cDNA (see column lines 1-19) which necessarily teach the presence of DNase in a diagnostic method (claim 1).

Bhattacharjee et al US Patent No. 5,919,617 teach nucleic acids isolated from the biological samples or may remain embedded in such samples and that as used herein, "nucleic acids derived from a biological sample" encompasses DNAs and RNAs contained in a biological sample and specifically nucleic acids not isolated from the biological sample (see column 8 lines 1-23). Bhattacharjee et al US Patent No. 5,919,617 teach methods, hybridization probes are applied directly to a biological sample in a manner known as in situ hybridization (see column 8 lines 50-59) which correlates a method, comprising the steps of: a) treating sample to reduce an inhibitory effect of the sample on the diagnostic method; and b) performing the diagnostic method in the presence of DNase (claim 1).

Bhattacharjee et al US Patent No. 5,919,617 is relied upon as set forth supra. However, Bhattacharjee et al US Patent No. 5,919,617 does not teach a method, wherein the sample is treated with an oxidizing agent (claim 4); wherein the oxidizing agent is

hydrogen peroxide (H202) (claim 5); using a working concentration of hydrogen peroxide of 0.5% to 3% w/v (claim 6); wherein the human patient sample is obtained as a self-collected vaginal swab sample (claim 14).

Bhattacharjee et al US Application No. 20030039981 teach a method and materials for detecting the presence of a fungus in a biological sample (see abstract) obtained from healthy mammals subjects or those with frank or occult disease such at-risk patients from a site on or in the body (see 0037) which correlate to a method for preparing a sample method for preparing a sample obtained from a human patient for performing a diagnostic method to detect whether the patient has been infected with an infectious agent.

Bhattacharjee et al US Application No. 20030039981 teaches nucleic acids derived from the biological samples of the present invention may be DNA, including but not limited to cDNA, and RNA, including but not limited to mRNA. Bhattacharjee et al teach RNA isolated from mixtures of DNA and RNA by using selective exonucleases, such as DNase and RNA obtained from the sample can be converted to cDNA (see 0038) which necessarily teach the presence of DNase in a diagnostic method.

Bhattacharjee et al US Application No. 20030039981 teaches that Dnase 1 mg/ml (see 0157) which correlates to DNase present in an amount of more than 0.5 μg/ml (claim 2); and the DNase present in an amount more than 1.5 units of activity per ml (claim 3).

Switchenko et al teach a method for detecting the antigens in a clinical swab sample (Chlamydia) wherein the cell membrane components that are separated by solubilization with detergents (such as the oxidizing agent hydrogen peroxide) can be reconstituted which correlates to a method (which correlates to the use of an oxidizing agent/ hydrogen peroxide as set forth in claims 4 and 5). Switchenko et al further teach that antigens can be separated from cellular debris and biological fluids by detergents such as oxidizing agent hydrogen peroxide. Switchenko et al teach solubilization thereof can be accomplished in accordance with the present invention by incubation of the (Chlamydia) bacterial sample in the presence of a detergent such as oxidizing agent hydrogen peroxide as described above, usually in the concentration range of from about 0.01 to 1.0%, weight to volume. Finally, Switchenko et al teach one aliquot was

combined with sufficient H_2O_2 to yield a final concentration of 1%. (see abstract column 7 lines 17-67, column 8, column 9 lines 40-47, column 18 Example 4) which correlates to a method with a working concentration of hydrogen peroxide of 0.5% to 3% w/v.

It would have been prima facie obvious at the time the invention was made modify the method of Bhattacharjee et al. by incorporating an amount of Dnase as set forth supra as taught by Bhattacharjee et al US Application No. 20030039981 in order to take advantage of the its ability to increase sensitivity in RNA based methods.

It would have been equally obvious to one of skill in the art to was made to modify the method by incorporating hydrogen peroxide for detecting the antigens in a biological sample (as disclosed by Switchenko et al) to remove unwanted cellular debris for the samples.

One would have a reasonable expectation of success because to use hydrogen peroxide in the method (as disclosed Switchenko et al) is well known in the art.

8. Claims 1, 10-12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhattacharjee et al US Patent No. 5,919,617 Date July 16, 1999 in view of Sheiness et al US Patent No. 5,776,694 Date July 7, 1998, and Harada et al US Patent No. 4,251,643 Date March 16, 1979.

Claims 1, 10-12, and 14 are drawn to a method for preparing a sample obtained from a human patient for performing a diagnostic method to detect whether the patient has been infected with an infectious agent, wherein the sample is an endocervical fluid sample or a vaginal fluid sample, wherein the method comprises the steps of:

a) treating sample to reduce an inhibitory effect of the sample on the diagnostic method; and b) performing the diagnostic method in the presence of DNase (claim 1); wherein the sample is treated with either or both polyvinyl alcohol (PVA) and polyvinyl pyrrolidone (PVP) (claim 10); wherein the sample is treated with PVA at a working concentration of between 0.01 and 0.5% w/v, wherein the PVA has an average molecular weight between 20 and 25 kDa (claim 11); wherein the sample is treated with PVP at working concentration between 0.2% and 2% w/v (claim 12).

Bhattacharjee et al US Patent No. 5,919,617 teach methods and materials for detecting the presence of a fungus in a biological sample (see abstract) obtained from healthy mammals subjects or those with frank or occult disease such at-risk patients from a site on or in the body (see column 7 lines 60-67) which correlate to a method for preparing a sample method for preparing a sample obtained from a human patient for performing a diagnostic method to detect whether the patient has been infected with an infectious agent (claim 1).

Bhattacharjee et al US Patent No. 5,919,617 teach samples comprising tissues, including but not limited to swabbing from mucocutaneous membranes such as swabs from the vagina which correlate to a method, wherein the sample is an endocervical fluid sample or a vaginal fluid sample, wherein the human patient sample is obtained as a self-collected vaginal swab sample (see column 8 lines 1-7) (claim 14).

Bhattacharjee et al US Patent No. 5,919,617 teaches nucleic acids derived from the biological samples of the present invention may be DNA, including but not limited to cDNA, and RNA, including but not limited to mRNA. Bhattacharjee et al US Patent No. 5,919,617 teach RNA isolated from mixtures of DNA and RNA by using selective exonucleases, such as DNase and RNA obtained from the sample can be converted to cDNA (see column lines 1-19) which necessarily teach the presence of DNase in a diagnostic method (claim 1).

Bhattacharjee et al US Patent No. 5,919,617 teach nucleic acids isolated from the biological samples or may remain embedded in such samples and that as used herein, "nucleic acids derived from a biological sample" encompasses DNAs and RNAs contained in a biological sample and specifically nucleic acids not isolated from the biological sample (see column 8 lines 1-23). Bhattacharjee et al US Patent No. 5,919,617 teach methods, hybridization probes are applied directly to a biological sample in a manner known as in situ hybridization (see column 8 lines 50-59) which correlates a method, comprising the steps of: a) treating sample to reduce an inhibitory effect of the sample on the diagnostic method; and b) performing the diagnostic method in the presence of DNase (claim 1).

Bhattacharjee et al US Patent No. 5,919,617 is relied upon as set forth supra. Bhattacharjee et al US Patent No. 5,919,617 does not teach a method, wherein the sample is treated with either or both polyvinyl alcohol (PVA) and polyvinyl pyrrolidone (PVP) (claim 10); wherein the sample is treated with PVA at a working concentration of between 0.01 and 0.5% w/v, wherein the PVA has an average molecular weight between 20 and 25 kDa (claim 11); wherein the sample is treated with PVP at working concentration between 0.2% and 2% w/v (claim 12).

Sheiness et al teach a method and kit for selective detecting a microorganism in vaginal samples associated with vaginal disorders obtained from a human patient (see abstract, column 39 lines 25-27, columns 23-24) which correlates to a method for preparing a human clinical sample for performing a diagnostic method on the sample for detection of an infectious agent, wherein the sample is an endocervical fluid sample or a vaginal fluid sample (see claim 1).

Sheiness et al teach a method, wherein a method comprises the steps of: a) treating the sample to reduce an inhibitory effect of the sample on the diagnostic method, wherein the sample is treated with PVP, further comprising a working concentration of 0.02% (w/v) (see claim 11) (see column 31 lines 24-29). Sheiness et al teach that patient samples may be collected, processed and used in medical practioner's office, hospital, etc. (see example 6 and abstract) which correlate to a method, wherein the human patient sample is obtained as a self-collected vaginal swab sample, wherein the method is for detection of Chlamydia trachomatis (see column 32 line 5 and column 19 lines 25-30, and column 12), wherein the patient sample is a self-collected vaginal swab sample (see column 7 lines 35-67, column 18-19, column 24 lines 55-60, table 2).

As to the limitation dependent claim 12, the claim states said recitation, "wherein the sample is treated with PVP at a working concentration between 0.2% and 2% w/v". According to section 2144.05 of the MPEP, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454,

456, 105 USPQ 233, 235 (CCPA 1955). See also *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.")

A particular parameter must first be recognized as a result-effective variable, i.e., a variable, which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). In the instant application, the amount of Sheiness et al. produced a recognized result. Therefore, determining other optimum or workable amounts is routine experimentation.

Harada et al teach absorbent materials for aqueous fluids, which absorb fluid rapidly and swell uniformly, comprise modified polyvinyl alcohol polymers obtained by reacting in an anhydrous condition a polyvinyl alcohol polymer. Absorbent articles such as diapers, sanitary napkins, sanitary tampons, blood absorbents for use in surgical operations, bandages and dressings comprise said absorbent materials and fluid absorbing holders therefore.

Harada et al teach PVA type polymers that may be used as starting materials for making absorbent materials and further teach PVAs with molecular weights of 100-5000 g/mol (see section 6)

As to the limitation dependent claim 11, the claim states said recitation, "wherein the sample has an average molecular weight between 20 and 25 kDa". According to section 2144.05 of the MPEP, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). See also *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.")

A particular parameter must first be recognized as a result-effective variable, i.e., a variable, which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). In the instant application, the amount of Harada et al. produced a recognized result. Therefore, determining other optimum or workable amounts is routine experimentation.

It would have been prima facie obvious at the time the invention was made to modify the method of Bhattacharjee et al. by incorporating an polyvinyl pyrrolidone (PVP) as set forth supra as taught by Bhattacharjee et al US in order to take advantage of the its ability to absorb water and swell very rapidly and generate a swelling force to detect organisms in a sample.

It would have been equally obvious to one of skill in the art to was made to modify the method by incorporating polyvinyl alcohol (PVA) for detecting the antigens in a biological sample (as disclosed by Switchenko et al) as an adhesive by embedding and preserving particles in a sample to detect organisms.

One would have a reasonable expectation of success because to use polyvinyl alcohol (PVA) in the method (as disclosed Switchenko et al) is well known in the art.

9. Claims 1 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheiness et al US Patent No. 5,776,694 Date July 7, 1998 in view of Bhattacharjee et al US Patent No. 5,919,617 Date July 16, 1999.

Claims 1 and 14-17 are drawn to a method for preparing a sample obtained from a human patient for performing a diagnostic method to detect whether the patient has been infected with an infectious agent, wherein the sample is an endocervical fluid sample or a vaginal fluid sample, wherein the method comprises the steps of:

a) treating sample to reduce an inhibitory effect of the sample on the diagnostic method; and b) performing the diagnostic method in the presence of DNase (claim 1); wherein the human patient sample is obtained as a self-collected vaginal swab sample (claim 14); wherein the method is for detection of *Chlamydia trachomatis* (claim 15);

wherein the patient is a self-collected vaginal swab and the methods is for detection of Chlamydia trachomatis (claim 16); wherein the method is a dipstick test method (claim 17).

Sheiness et al teach a method and kit for selective detecting a microorganism in vaginal samples associated with vaginal disorders obtained from a human patient (see abstract, column 39 lines 25-27, columns 23-24) which correlate to a method for preparing a human clinical sample for performing a diagnostic method on the sample for detection of an infectious agent, wherein the sample is an endocervical fluid sample or a vaginal fluid sample (claim 1). Sheiness et al teach a method, reducing and lysis reagents and the cells of the prokaryotic and eukaryotic microorganisms of interest are lysed by combining the single, complex biological sample containing the microorganisms with a lysis solution, thereby releasing nucleic acid, i.e., the target nucleic acid (see columns 9 lines 1-15 and column 19 lines 15-50, column 23 lines 55-67), from the microorganisms which correlates with the method steps of: a) treating the sample to reduce an inhibitory effect of the sample on the diagnostic method (claim 1). Sheiness et al teach that patient samples may be collected, processed and used in medical practioner's office, hospital, etc. (see example 6 and abstract) thus Sheiness et al teach a method, wherein the human patient sample is obtained as a self-collected vaginal swab sample, wherein the method is for detection of Chlamydia trachomatis (see column 32 line 5 and column 19 lines 25-30, and column 12), wherein the patient sample is a self-collected vaginal swab sample and the method is for detection of Chlamydia trachomatis (claim 14-16), wherein the method is a dipstick method (see column 7 lines 35-67, column 18-19, column 24 lines 55-60, table 2) (claim 17).

Sheiness et al is relied upon as set forth supra. Sheiness et al does not teach a method, b) performing the diagnostic method in the presence of DNase (claim 1).

Bhattacharjee et al US Patent No. 5,919,617 teach methods and materials for detecting the presence of a fungus in a biological sample (see abstract) obtained from healthy mammals subjects or those with frank or occult disease such at-risk patients from a site on or in the body (see column 7 lines 60-67) which correlate to a method for preparing a sample method for preparing a sample obtained from a human patient for

performing a diagnostic method to detect whether the patient has been infected with an infectious agent (claim 1).

Bhattacharjee et al US Patent No. 5,919,617 teach samples comprising tissues, including but not limited to swabbing from mucocutaneous membranes such as swabs from the vagina which correlate to a method, wherein the sample is an endocervical fluid sample or a vaginal fluid sample, wherein the human patient sample is obtained as a self-collected vaginal swab sample (see column 8 lines 1-7) (claim 14).

Bhattacharjee et al US Patent No. 5,919,617 teaches nucleic acids derived from the biological samples of the present invention may be DNA, including but not limited to cDNA, and RNA, including but not limited to mRNA. Bhattacharjee et al US Patent No. 5,919,617 teach RNA isolated from mixtures of DNA and RNA by using selective exonucleases, such as DNase and RNA obtained from the sample can be converted to cDNA (see column lines 1-19) which necessarily teach the presence of DNase in a diagnostic method (claim 1).

Bhattacharjee et al US Patent No. 5,919,617 teach nucleic acids isolated from the biological samples or may remain embedded in such samples and that as used herein, "nucleic acids derived from a biological sample" encompasses DNAs and RNAs contained in a biological sample and specifically nucleic acids not isolated from the biological sample (see column 8 lines 1-23). Bhattacharjee et al US Patent No. 5,919,617 teach methods, hybridization probes are applied directly to a biological sample in a manner known as in situ hybridization (see column 8 lines 50-59) which correlates a method, comprising the steps of: a) treating sample to reduce an inhibitory effect of the sample on the diagnostic method; and b) performing the diagnostic method in the presence of DNase (claim 1).

It would have been prima facie obvious at the time the invention was made to modify the method of Sheiness et al. by incorporating Dnase as set forth supra as taught by Bhattacharjee et al 5,919,617 in order to take advantage of the its ability to increase sensitivity in RNA based methods.

Citation of Relevant Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Huguenel et al. US Patent No. 5,166,053 Date November 24, 1992 teaches a method for determining the adequacy of a cervical or urethral test specimen collected for an immunological assay to detect the presence of Chlamydia trachomatis.

Status of the Claims

9. No claims are allowed.

Claims 7-9 and 18-22 are withdrawn.

Claims 1-6, 10-12, 14-17 are rejected.

Conclusion

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nina A. Archie whose telephone number is 571-272-9938. The examiner can normally be reached on Monday-Friday 8:30-5:00p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Robert Mondesi can be reached on 571-272-0956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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